

Genetics and Molecular Biology of Streptococci, Lactococci, and Enterococci

Edited by Gary M. Dunny, *University of Minnesota, St. Paul*;
P. Patrick Cleary, *University of Minnesota Medical School, Minneapolis*;
and Larry L. McKay, *University of Minnesota, St. Paul*

This new book summarizes the current state of streptococcal genetics research being conducted by microbial geneticists and medical, dental, veterinary, and food microbiologists around the world. Its intended audience includes researchers and educators working in the above disciplines and scientists developing and applying this research in the food, pharmaceutical, biotechnological, and vaccine industries.

Also presented is valuable reference information on genetic techniques such as electroporation, cloning vectors, and other essential guidance for researchers working on streptococci and other gram-positive bacteria.

This book had its origin in the 3rd International ASM Conference on Streptococcal Genetics, June 1990.

Condensed Contents

- I. Gene Transfer (11 chapters by *Clewell et al.*, *Dunny et al.*, *Horaud et al.*, *Trieu-Cuot et al.*, *Scott*, *Wirth et al.*, *Clewell et al.*, *Rothschild et al.*, *Vijayakumar et al.*, *Hodel-Christian et al.*, *Possi et al.*)
- II. Molecular and Genetic Analysis of Pneumococci (7 chapters by *Hui et al.*, *Prudhomme et al.*, *Lacks et al.*, *López et al.*, *Boulnois et al.*, *Yother et al.*, *Hakenbeck et al.*)
- III. Lactococci: Molecular Biology and Biotechnology (9 chapters by *Kok*, *Davidson et al.*, *Steen and Hansen*, *de Vos et al.*, *Chopin et al.*, *Klaenhammer et al.*, *Coffey et al.*, *Xu et al.*, *Bourgeois et al.*)
- IV. Structure and Evolution of the M-Protein Gene Family (7 chapters by *Cleary et al.*, *Schneewind et al.*, *Lindahl et al.*, *Timoney et al.*, *Poirier et al.*, *Kehoe et al.*, *Hollingshead et al.*)
- V. Extracellular Products of Pathogenic Streptococci: Genetics and Regulation (12 chapters by *Rubens et al.*, *Malke and Ferretti*, *Johnston et al.*, *Hauser et al.*, *Ferretti et al.*, *Gilmore*, *Michel et al.*, *Wessels et al.*, *Wennerstrom et al.*, *Golubkov et al.*, *Suvorov et al.*, *Suvorov and Ferretti*)
- VI. Molecular Biology of Oral Streptococci (12 chapters by *LeBlanc and Lee*, *Fives-Taylor et al.*, *Russell et al.*, *Macrina et al.*, *Kuramitsu et al.*, *Sun et al.*, *Hudson and Curtiss*, *Gilbert et al.*, *Burne et al.*, *Banas and Gilmore*, *Jenkinson*, *Hantman et al.*)

VI. Molecular Biology of Oral Streptococci (12 chapters by *LeBlanc and Lee*, *Fives-Taylor et al.*, *Russell et al.*, *Macrina et al.*, *Kuramitsu et al.*, *Sun et al.*, *Hudson and Curtiss*, *Gilbert et al.*, *Burne et al.*, *Banas and Gilmore*, *Jenkinson*, *Hantman et al.*)

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A very timely examination of microbial processes that affect global climate

MICROBIAL PRODUCTION AND CONSUMPTION OF GREENHOUSE GASES: METHANE, NITROGEN OXIDES, AND HALOMETHANES

Edited by
John E. Rogers, *Environmental Protection Agency, Athens, Georgia,*
and
William B. Whitman, *University of Georgia, Athens*

Considered together, the impact of trace gases such as methane, nitrogen oxides, and halomethanes on global climate could equal that of carbon dioxide. Many of these less-publicized "greenhouse gases" are produced or metabolized by microorganisms.

This volume reviews current data on the relationship between microbial processes and the synthesis and degradation of methane, nitrogen oxides, and halomethanes in the environment. Major global sources of these gases, their atmospheric concentrations and isotopic compositions, and their production and consumption in terms of basic microbial processes in a variety of ecosystems are covered. Problems associated with scaling and model building as ways to identify significant global sources for microbially produced trace gases are also discussed.

This timely publication will greatly interest environmental and general microbiologists, earth and atmospheric scientists in general, and graduate students focusing in these areas.

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1. Introduction (*Rogers and Whitman*)
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Microbial Cell Surface Hydrophobicity

Edited by **R. J. Doyle**, *University of Louisville, Louisville, Ky.*, and **Mel Rosenberg**, *Tel Aviv University, Ramat Aviv, Israel*

Despite the voluminous journal literature on the hydrophobicity of microorganisms, its structural basis, and its role in microbial adhesion to surfaces, in differentiation, and in morphogenesis, this is the first book devoted to this subject. There has been a growing realization that hydrophobic interactions play a role in many, if not most, microbial adhesion phenomena, including microbial adhesion to soft host tissues, implants and prostheses, contact lenses, glass, oil, steel, teeth, submerged aquatic surfaces, plants, and fish.

This monograph covers in clear detail the hydrophobicities of fungi, especially *Candida* spp., and of staphylococci, streptococci, oral bacteria, soil and aquatic bacteria, the *Enterobacteriaceae*, and other Gram-negative bacteria. Each chapter is richly referenced, for those interested in delving further into a specific topic. The authors in this book were selected based on their substantial contributions to the field. Medical, applied, and environmental microbiologists; environmental, microbial, and petroleum engineers; infectious-disease physicians and researchers; and oral biologists will all benefit from this excellent summary and review.

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1. Microbial Cell Surface Hydrophobicity: History, Measurement, and Significance (*M. Rosenberg and Doyle*)
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Autoimmunity, Immunodeficiency, Malignancy

Viruses That Affect the Immune System

Edited by **Hung Y. Fan**, *Cancer Research Institute, University of California, Irvine*; **Irvin S. Y. Chen**, *UCLA School of Medicine, Los Angeles, California*; **Naomi Rosenberg**, *Tufts University School of Medicine, Boston, Massachusetts*; and **William Sugden**, *McArdle Laboratory, University of Wisconsin, Madison*

Viral infections in humans or animals almost always affect the host's immune system. In most cases, the immune system responds by developing a humoral or cell-mediated response, but some viruses can infect immune system cells, causing abnormalities such as autoimmunity, malignancy, or immunodeficiency. Understanding the properties of these viruses, particularly with regard to cells of the immune system, is important to elucidating the mechanisms by which they cause immunological damage.

Many of the viruses that cause immune system abnormalities are retroviruses or herpesviruses. The book commences with the editors' introductory overview of these major immune system viruses, then continues with four comprehensive sections on their mechanisms and effects. Human and other immunodeficiency viruses, retroviruses including human and murine leukemia viruses, Epstein-Barr virus, and cytomegalovirus are among the pathogens examined in depth.

Molecular biologists, virologists, and researchers into oncology, autoimmunity, and the immunodeficiency syndromes will find this book, the third in a popular series arising from the ICN-UCI Conferences on Virology, a valuable addition to the literature.

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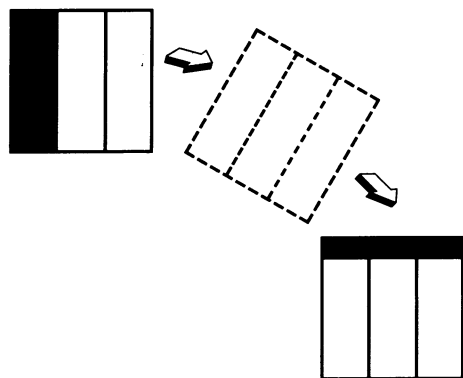
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